

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions and listings of the claims in the application.

1. (currently amended) A process of producing a coke product, said process comprising:

- (a) providing a coke precursor material of carbonaceous origin;
- (b) subjecting said coke precursor material to a thermal cracking process; and
- (c) maintaining the ratio of asphaltic coke to thermal coke sufficiently low so as to promote the production of sponge coke;

wherein said coke product is comprised of sponge coke in an amount in the range of about 40% to 100% by weight.

2. (currently amended) The process of claim 1 wherein:

- ~~said coke precursor material includes a volatile organic component; and~~
- said coke product has volatile combustible materials (VCMs) present in an amount in the range of from about 13% to about 50% by weight.

3. (currently amended) The process of claim 1 wherein the ratio of asphaltic coke to thermal coke is maintained by controlling at least one variable selected from the group consisting of coke precursor material characteristics, heater outlet temperature, ~~coke~~ drumcoking vessel temperature, ~~coke~~ drumcoking vessel pressure, ~~coke~~ drumcoking vessel thermal quench, ~~coke~~ drumcoking vessel chemical reaction quench, and combinations thereof.

4. (currently amended) The process of claim 3 wherein said ~~coke~~ drumcoking vessel thermal quench, said ~~coke~~ drumcoking vessel chemical reaction quench, or combinations thereof are added into a ~~coke~~ drumcoking vessel via injection systems

selected from the group consisting of an existing anti-foam injection system, modified drill stem, an injection lance at the top of the ~~coke-drum~~coking vessel, and combinations thereof.

5. (original) The process of claim 1 wherein said thermal cracking process is selected from the group consisting of delayed coking, Flexicoking, and other thermal cracking processes with by-product coke production.

6-20. (withdrawn)

21. (currently amended) A coking process comprising:

(a) providing a coke-drumcoking vessel containing a coke mass and a vapor phase above said coke mass; and

(b) injecting a quench medium into said vapor phase during a coking cycle; whereby thermal cracking in said vapor phase is quenched during said coking cycle.

22. (original) The coking process of claim 21 wherein said thermal cracking is inhibited by a quench selected from the group consisting of a thermal quench, chemical reaction quench, and combinations thereof.

23. (currently amended) The process of claim 21 wherein:

said quench medium is selected from a group consisting of hydrogen, water, ~~coke~~ gas oil, and combinations thereof; ~~and~~

~~said quench medium is injected via a modified drill stem positioned in said coke drum during said coking cycle and maintained at a level about 2 to about 20 feet above said coke mass.~~

24-47. (withdrawn)

48. (new) The process of claim 21 wherein said quench medium is injected via a modified drill stem positioned in said coking vessel during said coking cycle and maintained at a level about 2 to about 20 feet above said coke mass.

App. No. 10/027,677

Amendment mailed December 30, 2003

Re: Office Action mailed July 30, 2003

49. (new) The process of claim 3 wherein said coke precursor material characteristics are modified by increasing aromatic content or decreasing content of asphaltenes and/or resins whereby said ratio of asphaltic coke to thermal coke in the coking reactions is reduced.

50. (new) The process of claim 3 wherein said heater outlet temperature is decreased sufficiently below conventional heater outlet temperature whereby said ratio of asphaltic coke to thermal coke in the coking reactions is reduced.

51. (new) The process of claim 3 wherein said coking vessel temperature is decreased sufficiently below conventional coking vessel temperature whereby said ratio of asphaltic coke to thermal coke in the coking reactions is reduced.

52. (new) The process of claim 3 wherein said coking vessel pressure is increased sufficiently above conventional coking vessel pressure whereby said ratio of asphaltic coke to thermal coke in the coking reactions is reduced.

53. (new) The process of claim 3 wherein said coking vessel thermal quench decreases said coking vessel temperature sufficiently below conventional coking vessel temperature whereby said ratio of asphaltic coke to thermal coke in the coking reactions is reduced.

54. (new) The process of claim 3 wherein said coking vessel chemical reaction quench sufficiently decreases cracking of aromatic compounds whereby said ratio of asphaltic coke to thermal coke in the coking reactions is reduced.